REMARKS

Claims 1, 3-8 and 17-19 are all the claims pending in the application. Applicants have thoroughly reviewed the outstanding Office Action, including the Examiner's remarks and the references cited therein. The following remarks are believed to be fully responsive to the Office Action, and are believed to demonstrate that all claims at issue are patentable.

Drawings

Upon review of the file, it does not appear that the Examiner has indicated that the drawings originally submitted with the application are acceptable. Approval is respectfully requested.

Claim Rejections under 35 U.S.C. §103(a)

Claims 1, 3-8 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Jewell (US Patent No. 5,882,948) in view of Komoto et al. (US Patent No. 6,340,824) and Sasagawa et al. (US patent No. 5,162,878).

As shown in Fig. 3 and described at page 9 lines 5-9 of the specification, the claimed invention is featured in forming a first electrode and a second electrode on the same side of a substrate, i.e. the first electrode is located on an exposed portion of the n-type III-V compound semiconductor layer (the cladding layers 16); and the second electrode located is on an exposed portion of said p-type III-V compound semiconductor layer (the cladding layer 12), so that the current only run through the active layer 14, and the cladding layers 12 and 16, thereby decreasing the internal resistance of the light emitting diode and increasing the electro-optics transferring rate. Further, since the oxidized Bragg reflector layer (AlGaAs layer) is a current insulating layer, the electrodes have to be formed on a side of the substrate that allows the claimed invention to have other desirable features when oxidizing the high aluminum-containing layers of the single Bragg reflector layer so as to obtain the Bragg reflector layer having high reflectivity and reflected wavelengths covering almost all the visible spectrum (see page 4 lines 14-17; page 4 line 7-11 of the specification). Hence, the present invention simultaneously claims those two features of (1) two electrodes that are formed on the same side of the substrate and are

respectively formed on two III-V compound semiconductor layers of different types; and (2) oxidized high aluminum-containing layers alternatively stacked in a Bragg reflector layer.

In column 42, lines 51-58, Komoto et al. lists AlN/InN together with the combinations of such as SiO_2 and TiO_2; and a thin film made of any one of these materials and a thin film of aluminum gallium arsenide, aluminum gallium phosphide, tantalum pentoxide, polycrystalline silicon or amorphous silicon, wherein both layers forming the Bragg layer can be all oxidizable (such as SiO_2 and TiO_2). However, Komoto et al. does not teach that two adjacently stacked films forming the Bragg layer have different degrees of oxidation capability. Komoto et al. does not have the motivation to oxidize some films of the reflecting layer RE2 as current insulating layers.

Although Jewell teaches the use of a bottom mirror (Bragg reflector layer) 16 comprising alternating oxidizable layers 30 and non-oxidizable layers 32, Jewell's bottom mirror 16 is connected to electrodes 39 via conductive channels 38 (see Figure 1a and the related description of the specification). Jewell actually teaches both top mirror 28 and bottom mirror 16, and both are connected to respective electrodes 13 and 38 through channels 12 and 38. This arrangement is evidenced by Jewell's claim 1, which recites a structure that includes a **light emitting material**; a **current aperture region** proximal to the light emitting material; an aperture region comprising at least one layer of oxidizable material; a second semiconductor layer above the light emitting material; an impurity material diffused through a first region of the layer of oxidizable material to decrease the susceptibility to oxidization in the first region of the layer of oxidizable material, the impurity providing an **electrically conductive channel** through the layer of oxidizable material; an **exposed sidewall** of at least one layer of the oxidizable layers ; and **a current aperture** in the oxidizable layer. Apparently, the current aperture region 24 is disposed between the top mirror 28 and the bottom mirror 16, and the top mirror 28 and the bottom mirror 16 both have cavities (channels 12 and 38). Further, Jewell's electrodes are either on the conductive channels or on the same layer (such as layer 26 shown in Fig. 2 or element 28" shown in Fig. 4).

In view of the forgoing description, Komoto's purpose and structure are extremely different from Jewell's purpose and structure, and both of them do not have the motivation to

teach or suggest the above-described features of the claimed invention, and thus it is not obvious for those who are skilled in the art to combine Komoto and Jewell to make the structures recited in the present invention. Therefore, Jewell in view of Komoto et al. do not teach or suggest claims 1 and 17 of the present invention.

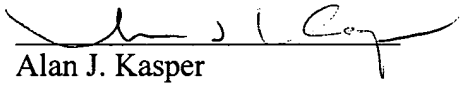
In the current Office Action, Examiner cited Sasagawa's reference to show the use of a single Bragg reflector under an LED. However, such as shown Fig 4, Sasagawa's electrodes 17 and 18 are located on two opposite sides of the substrate, and Sasagawa et al. merely disclose doping the layers of the mirror 13 with Se, but does not suggest or teach oxidizing the layers of the mirror 14 to form alternating semiconductor layers having different refractive indices. Since Sasagawa et al. fail to teach or suggest all the above-described features of the claimed invention, there is no motivation to combine jewell, Komoto et al. and Sasagawa et al. to obtain the structure recited in claims 1 and 18 of the claimed invention.

With regard to claims 3-8 and claims 18-19, since claims 1 and 17 is patentable, dependent claims 3-8 and 18-19 depending from independent claims 1 and 17 are likewise patentable. Accordingly, the Applicants respectfully request that the section 103(a) rejection be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Alan J. Kasper
Registration No. 25,426

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

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